

ZSL SCIENCE AND CONSERVATION EVENT

## **Life in the cold: Celebrating a decade of collaborative marine research in Greenland**



**Tuesday 8 June 2021**  
**6:00pm – 7:30pm UK Time (GMT)**

Online event livestreamed to [zsl.org/IOZYouTube](https://www.youtube.com/watch?v=ZvUpqH085gc)

[Direct link: <https://youtu.be/ZvUpqH085gc>]

There is no charge for this event, and no need to register in advance

### **AGENDA**

**Dr Chris Yesson, Institute of Zoology, ZSL**  
*A decade of research in Greenland*

**Dr Diana Krawczyk, Greenland Climate Research Centre**  
*Exploring Seafloor in Greenland*

**Stephen Long, Institute of Zoology, ZSL and University College London**  
*Deep impact: Deep-sea benthic habitats and the impacts of trawling in west Greenland*

**Nanette Hammeken Arboe, Greenland Institute of Natural Resources**  
*Monitoring of benthic communities in Greenland: How and why we do it?*

# ABSTRACTS

## **A decade of research in Greenland**

*Dr Chris Yesson, Institute of Zoology, ZSL*

This talk will present an overview of ZSL's decade of benthic research in Greenland. It will tell the story of the project's beginnings as a small pilot taking photos of the seabed. We will show how we have worked closely with both Sustainable Fisheries Greenland and the Greenland Institute of Natural Resources to provide evidence of seabed habitats in the region. We will cover a decade of fieldwork adventures including encounters with icebergs, the Greenland shark and the sponge equivalent of a Venus flytrap. Our work has always been delivered on a tight budget, and we will describe how we have used low-cost camera systems to provide pictures of the deep-sea. Finally we will show how our work assessing the impact of trawling has helped lead to the introduction of gear changes and the creation of protected areas.

**Chris Yesson** is a research fellow at ZSL Institute of Zoology, where he has worked for 12 years. He is a benthic ecologist with a particular interest in sessile, habitat forming organisms, such as corals and seaweeds. He has been researching the seabed of Greenland for 10 years, working closely with Greenland Institute of Natural Resources and Sustainable Fisheries Greenland. His research has documented a variety of vulnerable marine habitats in the region, including the discovery of new coral gardens and seapen fields. He is also treasurer and trustee of the Deep-Sea Biology Society.

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## **Exploring Seafloor in Greenland**

*Dr Diana W. Krawczyk, Greenland Climate Research Centre*

Distribution of benthic habitats is an important element in understanding the function and services of the marine ecosystems. A well-founded knowledge of the marine bio environment is crucial for sustainable use of marine resources, which Greenland's economy is highly dependent on. However, Greenland's seafloor and the knowledge of benthic habitats are largely unexplored. In 2017, Greenland Climate Research Centre initiated a seafloor mapping strategy in collaboration with Zoological Society of London, Geological Survey of Denmark and Greenland and Danish Technical University. This strategy was established to develop benthic geophysical research in Greenland together with the ongoing benthos monitoring program. The successful pilot study and the first high-resolution benthic habitat map was produced for the Disko Bay area. This region is characterised by a complex topography and hydrography, and is considered a biodiversity hotspot, identified as the Ecologically and Biologically Significant Area by the International Union for Conservation of Nature. The research consortium developed the 'best practice' protocol for mapping benthic habitats in the Arctic environment, basing it's methodology on combining geophysical data from multi-beam sonar surveys with ground-truth data on sediments and biota from seabed imagery. Since the development stage, the research consortium has continued to map the seafloor in Disko Bay and other strategically important areas in Greenland.

**Diana W. Krawczyk** is a palaeoceanographer and a marine geophysicist at the Greenland Climate Research Centre c/o Greenland Institute of Natural Resources. She developed sonar-based research anchored in Nuuk, Greenland and coordinates geophysical and paleoclimate projects at the Centre. She is a founder of the long-term research program focused on modelling Greenland seafloor and benthic habitat mapping which aims at building an online 3D platform with Greenland seafloor terrain and associated information on benthic habitats, fauna and geology.

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## **Deep impact: Deep-sea benthic habitats and the impacts of trawling in west Greenland**

*Stephen Long, Institute of Zoology, ZSL and University College London*

The offshore Greenland halibut (*Reinhardtius hippoglossoides*) fishery employs bottom trawls at depths of 800 – 1,400 m, in the Davis Strait, west Greenland. The recent Marine Stewardship Council (MSC) certification of the fishery highlighted the paucity of knowledge about the nature and distribution of deep-sea habitats and the impacts of trawling in this poorly known region of the northwest Atlantic. A purpose-built, low-cost video sled was used to sample across a spectrum of fishing effort, including untrawled areas outside of the fishery footprint. The imagery gathered from these previously unseen ecosystems, has yielded new insights into the habitats, communities and their responses to trawling. Findings include the identification of three candidate vulnerable marine ecosystems (VME): ecologically important ecosystems that are potentially sensitive to anthropogenic disturbance. The implications of these findings for management and the MSC certification are considered.

**Stephen Long's** interests lie in identifying socio-economically viable ways of sustainably managing natural resources. This interest has driven his research using ecological and social science approaches to study marine ecosystems and fisheries in the UK, Madagascar and Greenland. His PhD has focussed on deep-sea ecosystems, using a purpose-built towed video sled to capture imagery of previously unseen habitats and understand the impacts of commercial trawling in west Greenland.

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## **Monitoring of benthic communities in Greenland – How and why we do it?**

*Nanette Hammeken Arboe, Greenland Institute of Natural Resources*

Motivated by a large gap in our knowledge about the benthic ecosystem in Greenland waters in general, and the influence of climate changes, demersal trawling, oil exploitation and other potential stressors, Greenland Institute of Natural Resources (GINR) initiated a long-term monitoring program of marine bottom-living invertebrate fauna (benthos) in 2015. The program is based on GINR's annual stock assessment surveys (trawl surveys) in Greenland waters, where the bycatch of benthos is registered. The approach is used as a minimum-standard for large-scale and long-term monitoring of benthos in Greenland and has proven effective for documenting large-scale patterns in benthic species distribution and community structure. The data can feed directly into management supporting sustainable development as agreed in the Convention on Biological Diversity in 1992, and the Sustainable Development Goals adopted by United Nations member states in 2015. In addition to the

trawl bycatch-program we are using a video sled equipped with a GoPro camera to further investigate designated areas.

This presentation will feature a video of the seabed in West Greenland, where you will see examples of different types of bottom habitats and the faunal communities associated with these.

**Nanette Hammeken Arboe** is a Research Scientist working in the Greenland Institute of Natural Resources (GINR), in the Department of Fish and Shellfish. Nanette has developed and implemented the GINR long-term monitoring program of marine bottom-living invertebrate fauna (benthos) since 2014. The reason for starting this program was motivated by a large gap in knowledge about the benthic ecosystem in Greenland waters in general, and the influence of climate changes, demersal trawling, oil exploitation and other potential stressors. The project started registering bycatch of benthos in the annual stock assessment surveys (trawl surveys) in Greenland waters in 2015.

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## Format of Live Events

- This interactive online event will be livestreamed to our YouTube channel here: [zsl.org/IOZYouTube](https://zsl.org/IOZYouTube). A direct link to the livestream will also be shared on the event web page before the event.
  - Before attending this event, please read our Code of Conduct found [here](#).
  - This event will run from 6:00pm – 7:30pm, and will be recorded and available to watch afterwards on our YouTube channel.
  - Each event will comprise of 3 – 4 presentations from experts in the topic, similar to our previous events.
  - There will be opportunities for the audience to submit questions during the event (this process will be explained on the night), to be answered live after each presentation. If you wish to submit a question to a speaker prior to the event, please send it to [scientific.events@zsl.org](mailto:scientific.events@zsl.org). Please be aware we may not be able to answer all questions.
  - There is no charge for this event, and no need to register in advance.
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## ZSL Wild Science Podcast

Listen to our award winning **ZSL Wild Science podcast** episodes produced by Dr Monni Böhm and Eleanor Darbey here: [www.zsl.org/zsl-wild-science-podcast](http://www.zsl.org/zsl-wild-science-podcast).

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Join us for our final online event of the 2020 – 2021 programme!

## **Biobanking for conservation: Why cryopreservation is essential for addressing our biodiversity crisis**

13 July 2021, 6:00pm – 7:30pm



Cryopreservation (often called biobanking), through the cryogenic preservation of DNA, blood and or tissues and reproductive cells is an increasingly feasible conservation support option for a wide range of taxa groups facing a biodiversity crisis. However, the number of species currently represented in biobanks remains extremely low relative to the conservation need and the availability of suitable material, especially in zoos and aquariums. This event will provide an overview of conservation biobanking and the challenges it faces, whilst emphasising how and why biobanking should be incorporated into mainstream conservation planning to combat the biodiversity crisis.

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### **Further Information**

- Please contact the Science Communications and Events Manager, Eleanor Darbey ([eleanor.darbey@zsl.org](mailto:eleanor.darbey@zsl.org)), if you have any queries about our Science events or podcasts.
- For press enquiries, please contact the ZSL Press Office: [press.office@zsl.org](mailto:press.office@zsl.org).
- For more information about how to join the ZSL Fellowship programme and engage with a network of thousands who are shaping the future of conservation, please visit: [www.zsl.org/membership/zsl-fellowship](http://www.zsl.org/membership/zsl-fellowship).
- To receive email updates about forthcoming ZSL Science and Conservation Events, please visit: [www.zsl.org/science/whats-on/science-and-conservation-events-email-updates](http://www.zsl.org/science/whats-on/science-and-conservation-events-email-updates)
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- Join us on our Facebook page [@ZSLScienceAndConservation](https://www.facebook.com/ZSLScienceAndConservation) for announcements of each event.

To feed and care for our 30,000 animals, many of which are endangered, costs £1million a month and the national lockdown has left us struggling. But with your help we can carry on caring for our amazing animals and continue our global conservation work. Support us today – **Join, visit or donate.**